

Battle Force Email (BFEM) and other HF Issues



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Program Information



- ❑ **Battle Force E-mail 66**
 - ◆ **Sponsor: CNO N61**
 - ◆ **Funding:**
 - **OPN – In Place**
 - **OMN – ISEA Not funded; \$360K required**
 - ◆ **Requirement: High Frequency Data Systems (HFDS) ORD #330-06-93 (modifications for BFEM in approval chain)**

System Description



- ❑ **Provides basic IP data transfer capability between Allied/NATO/Coalition afloat forces**
 - ◆ **Primarily using HF spectrum**
 - ◆ **All allies have HF capability**
 - ◆ **Modern HF modems allow higher performance**
 - ◆ **File attachments – ASCII & Imagery files**

- ❑ **Automatic transfer using:**
 - ◆ **SMTP/POP3 E-Mail messages**
 - ◆ **Data speeds up to 9.6KBPS coded (half duplex) point-to-point**

- ❑ **Provides inter-ship user-to-user service**

- ❑ **Secure transfer using KG-84A/C or KIV-7 crypto**

Battle Force E-Mail Operation



□ Network and Server Operation:

- ◆ System is completely automatic once radio net is properly established.
- ◆ Operates in a Carrier-Sense Multiple Access (CSMA) network discipline.
- ◆ Data is conveyed in a series of point-to-point connections—nearly identical to Ethernet LAN, except at much lower data rates.
- ◆ Radio connection is half-duplex.
- ◆ Member systems monitor the net, but respond only when packet is received with specific user address.

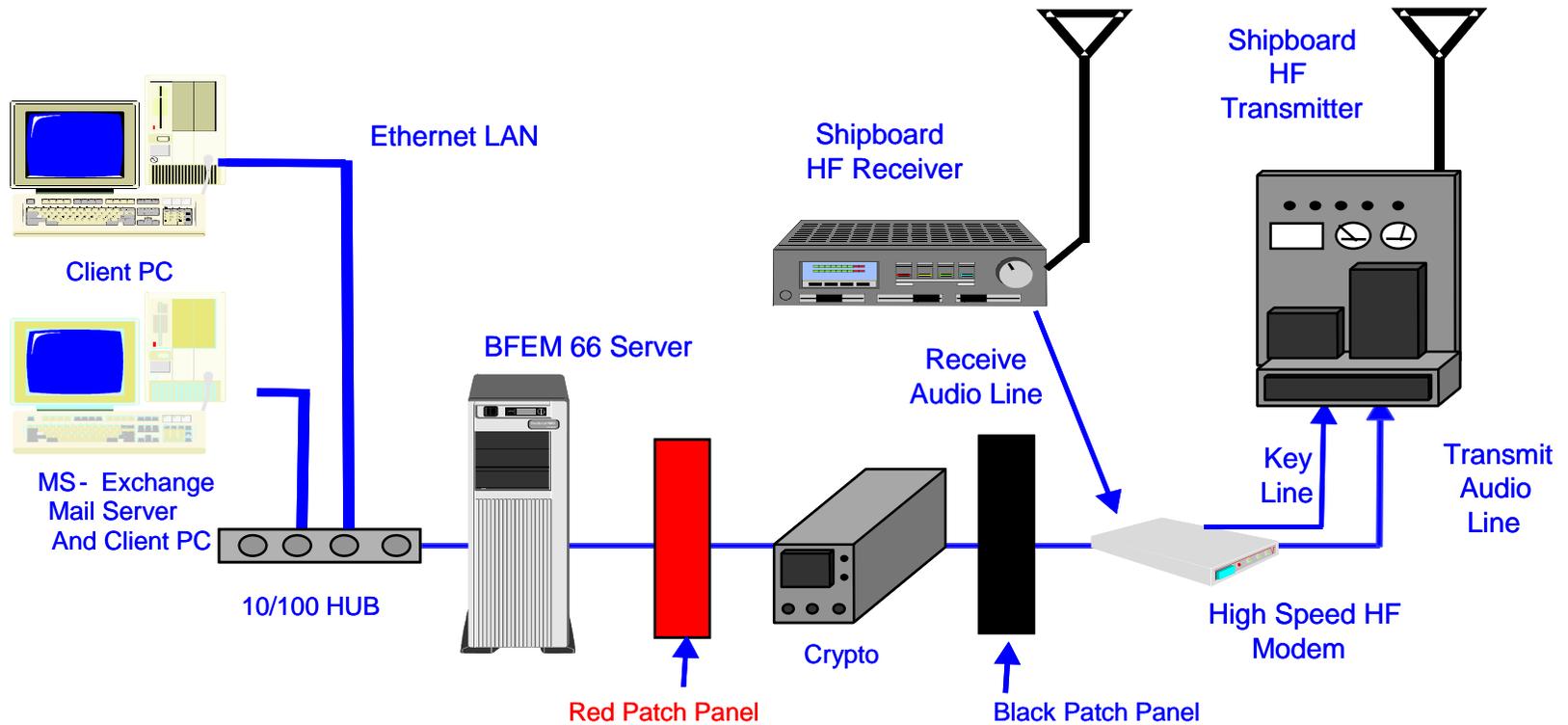
Battle Force E-Mail Operation - cont.



□ Network and Server Operation:

- ◆ Adaptive to link quality - number of packets sent increase if link is good.
- ◆ No E-mail loss due to power disruptions.
- ◆ Will complete delivery even if radio link is only available intermittently.
- ◆ Will “return to sender” if delivery is not achieved in a programmable time period.
- ◆ Packet operation insures error-free delivery.

Battle Force E-Mail 66 System Diagram



R&D Testing



- ❑ **FY 99/FY00 Lab testing SSC SD D846**
 - ◆ 5066 E-mail compliant software from Rockwell-Collins and Marconi.
 - ◆ MIL-STD-188-110B compliant modems from Harris and Rockwell-Collins

- ❑ **Back-to-back bench testing and Over-The-Air testing of initial COTS H/W and SW and each upgrade to include**
 - ◆ Point-to-point connections
 - ◆ 3 & 4 networked nodes
 - ◆ Data throughput analysis
 - ◆ STANAG 5066 compliance assessments
 - ◆ Vendor interoperability assessments
 - ◆ US/Allied crypto interoperability evaluations
 - ◆ USN RF Systems interoperability tests
 - ◆ Equipment configuration optimization



Implementation

□ Two-Phased Effort:

◆ Phase I (FY00)

- Funded SSC CHASN directly for BFEM 66 Hardware and Software procurement.
- Procured STANAG 5066 Software using FEDSIM vehicle.
- SSC CHASN - Integrate and Test.
- Installs: TRUMAN/NASSAU BG/ARG
KITTY HAWK/Essex BG/ARG (FDNF)
- AITs to Install for “Quick Reaction Capability”.

◆ Phase II (FY01)

- Free and Open Competition.
- SSCs to participate in Integration/Testing.
- Successful transition to production-based phase.

Program Plans



- ❑ **Installations: (FY00 funded)**
 - ◆ **TRUMAN/NASSAU BG/ARG, complete**
 - ◆ **KITTY HAWK/ESSEX BG/ARG, in progress**
 - ◆ **CONSTELLATION/BOXER BG/ARG, funded**
 - ◆ **ENTERPRISE/KEARSARGE BG/ARG, funded**
 - ◆ **FDNF MINE SWEEPERS**
 - **USS GUARDIAN**
 - **USS PATRIOT**
 - **USS ARDENT**
 - **USS DEXTROUS**
 - **USS CARDINAL**
 - **USS RAVEN**

Program Plans cont



- ❑ **Installations: (FY01 funded)**
 - ◆ **VINSON/PELELIU BG/ARG**
 - ◆ **TR/BATAAN BG/ARG**
 - ◆ **LINCOLN/BELLEAU WOOD BG/ARG**
 - ◆ **STENNIS/BH RICHARD BG/ARG**
 - ◆ **JFK/WASP BG/ARG**
 - ◆ **WASHINGTON/SAIPAN BG/ARG**
 - ◆ **Command Ships:**
 - **USS LA SALLE**
 - **USS CORONADO**
 - **USS MT WHITNEY**
 - **USS INCHON**

Current Issues



- Procurement of 31 BFEM 66 systems for CONSTELLATION/BOXER (12), ENTERPRISE/KEARSARGE BG/ARG (13) and FD Mine Forces (6) for installation in FY01.

- Analysis of performance of BFEM 66.

- Message received from CNO on BFEM 66 stating requirement for continued fielding.

- Letters in approval chain to MDA for:
 - ◆ authorization to continue fielding.
 - ◆ reaffirmation of ACAT IVT designation.

- Coordinating with sponsor to have BFEM designated “Rapid Deployment System” for acquisition purposes.

ISEA Funding



❑ Following HF/VHF/UHF Legacy Equipment Unfunded:

| | |
|--------------------------------|--------|
| ◆ AN/URC-131 (HFRG) | \$398K |
| ◆ BFEM 66 | \$360K |
| ◆ AN/URT-23 | \$190K |
| ◆ AN/URC-109 | \$276K |
| ◆ HF RECEIVERS | \$170K |
| ◆ HF COUPLERS | \$75K |
| ◆ ANTENNAS | \$75K |
| ◆ AN/URC-80 | \$30K |
| ◆ AN/GRC-211 / GRT-21 / GRR-23 | \$35K |
| ◆ AN/VRC-46 | \$40K |
| ◆ AN/WSC-3(V)7 | \$40K |
| ◆ AN/GRC-171 | \$20K |
| ◆ HSFBI / STANAG HF MODEM | \$40K |
| ◆ AN/FRT-96 | \$154K |

❑ Working with OPNAV N6



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Battle Force E-mail 66



PMW 179 Web Info:

- ❑ 179 Public Site:
<http://c4iweb.spawar.navy.mil/pmw179>

- ❑ 179 Fleet Area Site:
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